Rhodora

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THE NEW ENGLAND BOTANICAL CLUB

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SOME RESULTS OF A THIRD SUMMER'S BOTANIZING IN OKLAHOMA

U. T. Waterfall

During the summer of 1949 the author continued his investigations of the Oklahoma Flora as Botanist with the Oklahoma Biological Survey, University of Oklahoma. As in the past, the most interesting and taxonomically productive regions have been the Black Mesa area of the Oklahoma panhandle, extreme southwestern and extreme southeastern Oklahoma. The author has listed some of the characteristic species of these areas (Rhodora: **51**: 19–21, 1949 and Rhodora **51**), so it seems needless to repeat them here.

The following enumeration is concerned principally with species which the author has not found recorded from the state, and with distribution notes concerning species rarely collected in Oklahoma. The species believed to be newly reported for the state are prefixed with an asterisk. This assumption is based on checking the plants listed in Jeffs and Little, *A Preliminary List of the Ferns and Seed Plants of Oklahoma* (1930), Stemen and Myers, *Oklahoma Flora* (1937), Featherly, *Manual of the Grasses of Oklahoma* (1946), Hitchcock, *Manual of the Grasses of the United States* (1935), and on available monographs and other publications hereinafter cited. There are 36 such additions recorded. Specimens are usually cited so anyone in the future may know upon what basis these reports rest. The cited material is in the Bebb Herbarium of the University of Oklahoma, unless otherwise stated. Duplicates of the author's collections, when available, will be sent later to a few other herbaria.

ENUMERATION OF SPECIES

*AGROSTIS EXARATA Trin. was collected as *Waterfall* 9105, bed of North Carrizo Creek, 4 miles north of Kenton, Cimarron County, June 27, 1949.

It is not listed from Oklahoma by Featherly (*op. cit.*). Hitchcock (*op. cit:* 336) shows its occurrence in the adjoining states of Colorado and New Mexico. The cited collection has rather dense panicles and unawned lemmas.

*CENCHRUS PAUCIFLORUS Benth. Of 37 sheets of *Cenchrus* in our herbarium, all previously referred to *C. pauciflori*, 36 are representative of *C. longispinus* (Hackel) Fern. One is representative of *C. pauciflorus* Benth. as circumscribed by Fernald.[1] It is *Hopkins* 1004, wet sandy dunes along the Salt Fork of the Red River, 3 mi. west of Altus, Jackson County, October 24, 1936.

*ORYZOPSIS MICRANTHA (Trin. and Rupr.) Thurb. This species was taken as *Waterfall* 9090 in a canyon on the northern slopes of Black Mesa, 3 miles north of Kenton, Cimarron County, June 27, 1949.

Hitchcock (*op. cit:* 416) says it is found "from Saskatchewan to Montana, south to New Mexico and Arizona." The awn is early deciduous.

*PANICUM RAMISETUM Scribn. This species was collected as *Waterfall* 8990, mixed gypsum and dolomite, low hill south of Buck Creek, 4 miles west and 6½ miles south of Hollis, Harmon County, June 14, 1949.

Hitchcock (*Manual of Grasses of the United States:* 612. 1935) states that the range of the species is southern Texas and Northern Mexico. In the Bebb Herbarium of the University of Oklahoma the nearest collection is *Charles Smith* 131, 12 miles northwest of San Angelo, Tom Green County, Texas.

SPOROBOLUS GIGANTEUS Nash was taken as *Waterfall* 9039 from the Waynoka sand dunes, north of the Cimarron River south of Waynoka, Woods County, June 24, 1949.

According to Hitchcock (*op. cit.:* 406) the then known range of *S. giganteus* was "western Texas to Arizona". Featherly (*op. cit.:* 59) says that it has been collected in Woodward County.

TRISETUM INTERRUPTUM Buckl. In Hitchcock (*op. cit.:* 287) the range is given as being from Texas to Colorado and Arizona. Featherly (*op. cit.:* 61) says it is found in Payne County, Okla-

[1] Fernald, M. L. *Virginia Botanizing Under Restrictions.* RHODORA 45: 387–388. 1943.

homa. We have this species as *Jack Engleman* 166, Blaine County, April 26, 1937, and as *Waterfall* 8926, overgrazed pasture on red sandstone of the Quartermaster Formation, 11 miles south of Cheyenne, Roger Mills County, June 13, 1949.

*Eleocharis geniculata (L.) R. and S. (*E. caribaea* (Rottb.) Blake). So referred is *Waterfall* 3102, bank of pond south of fairgrounds, Oklahoma City, Oklahoma County, July 26, 1941.

This is not in the list of Jeffs and Little (*op. cit.*), and I do not find it elsewhere recorded from the state.

*Eleocharis parvula (R. & S.) Link, var. anachaeta (Torr.) Svens. So determined is *Waterfall* 3102 (a), bank of pond south of fairgrounds, Oklahoma City, Oklahoma County, July 26, 1941.

In his distribution map of var. *anachaeta* Svenson (Rhodora: **36:** 387. 1934) maps an ellipse which includes Oklahoma, but shows no dots representing collections from the state.

*Scirpus saximontanus Fernald. We have this species as *Penfound* 381, in shallow water, upper burhead zone, Gate Playa, near Gate, Beaver County, August 16, 1949.

When describing *S. saximontanus* Fernald (Rhodora: **3:** 251. 1901) cited specimens from Colorado, Texas and San Luis Potosi.

Polygonum dumetorum L., forma cristatum (Engelm. and Gray) Robinson. At the University of Oklahoma there is one sheet so referred. It is *Waterfall* 1770, open woods, 5¾ miles west of Oklahoma City, Oklahoma County, September 11, 1939.

Rumex pulcher L., ssp. divaricatus (L.) Murb. The material of *R. pulcher* so far collected in southeastern Oklahoma appears referrable to ssp. *divaricatus* as described by Rechinger.[1] The leaves are not panduriform, and the toothed valves of the fruit are about as long as broad, as is described for ssp. *divaricatus*.

*Eurotia lanata (Pursh) Moq. This species was collected as *Waterfall* 9230, top of Black Mesa, 3 miles north and 1 mile east of Kenton, Cimarron County, August 9, 1949.

*Alternanthera repens (L.) Kuntze. Referred to this species are plants collected as *Waterfall* 9159, roadside, Marietta, Love County, July 15, 1949.

Cory (*op. cit.*) lists it from the adjacent Blackland Prairie area of Texas.

*Amaranthus albus L., var. pubescens (Uline & Bray) Fern. So assigned are several sheets of *A. albus* (*A. graecizans*

[1] Rechinger, K. H., *The North American Species of Rumex*, Field Mus. Nat. Hist.—Bot. **17**: 130. 1937.

of auths.) which are viscid-puberulent, but not densely so. Representative are: *Rotha Bull* 299, 3 miles northwest of Granite, Greer County, August 9, 1931, and *McMurry* 538, Wichita Mountains, Comanche County, August 22, 1938.

Var. *pubescens* ("densely viscid-puberulent") is said to occur from "Nevada to southern Colorado and New Mexico." (*N. Am. Fl.* **21** (2): 116. 1917).

*AMARANTHUS SCLEROPOIDES Uline and Bray. So referred is material collected as *Waterfall* 8596, 3 miles west of Orienta, Major County, August 20, 1948.

In the North American Flora (**21** (2): 104. 1917) this species is said to occur in central and western Texas.

*PORTULACA LANCEOLATA Engelm. This species is easily recognized by the winged capsule-rim. We have at the Bebb Herbarium of the University of Oklahoma *Demaree* 13013, North Cache Creek, Medicine Park, June 19, 1936.

In the North American Flora (**21** (4): 330. 1932) the distribution is stated as being "western Texas to Arizona and Lower California; Georgia; Cuba and Jamaica". It is interesting to note that the type locality is "Granite region of western Texas", and that the Wichita Mountains are predominantly granite.

DELPHINIUM VIRESCENS Nutt. (TYPICAL).

In Jeffs and Little's *Preliminary List . . . D. Penardi* Huth is found in the synonymy of *D. virescens* Nutt. The material in our herbarium that was available for study prior to the time of that publication has all been assigned to typical *D. virescens* by Ewan.

D. VIRESCENS, ssp. PENARDI (Huth.) Ewan. The monographer of the genus when studying our material in 1944 annotated two sheets as ssp. *Penardi*. They are: *Goodman* 2569, sides of butte, 8 miles south of Watonga, Blaine County, May 25, 1935, and *Goodman* 2619a, Antelope Hills, Roger Mills County, May 26, 1935.

*D. VIRESCENS, ssp. WOOTONI (Rydb.) Ewan. So annotated by Ewan is *Demaree* 12362, low hills, Carmen, Alfalfa County, May 1, 1936.

LINDERA BENZOIN (L.) Blume, var. PUBESCENS (Palm. and Steyerm.) Rehder, (*Benzoin aestivale* (L.) Nees, var. *pubescens* Palm. and Steyerm. *Ann. Mo. Bot. Gar.* **22**: 545. 1935.)

The range given by Palmer and Steyermark when they described the pubescent vaiety (*loc. cit.*) included Oklahoma. Of

the 16 sheets we have in our herbarium from the eastern part of the state, 10 are var. *pubescens*, and 6 are of the glabrous var. *typica*.

*Draba reptans (Lam.) Fern., var. micrantha (Nutt.) Fern. Of 59 sheets of *D. reptans* from Oklahoma in our herbarium, 57 sheets are the typical glabrous-fruited var. *typica*. Two are referrable to the hispid-fruited var. *micrantha*. They are: *Couch* C-3, Arbuckle Mountains, Murray County, March 6, 1938, and *Stevens* A3055.2, without data.

Fernald[1] states that the range of var. *micrantha* is from "Louisiana to southern California, north to Illinois, Minnesota, South Dakota, Montana and Washington".

*Sisymbrium officinale (L.) Scop., var. leiocarpum DC. Of the 6 sheets of *S. officinale* in our herbarium 5 have glabrous fruits, the other one has the pubescent fruits of the typical variety.

*Physocarpus opulifolius (L.) Maxim., var. intermedius (Rydb.) Robins. This species was collected as *Waterfall* 9198, wooded calcareous slopes, 3 miles west and 2½ north of the state line west of Siloam Springs, Delaware County, July 27, 1949.

It has been collected previously in Arkansas (*Gray's Manual*, ed. 7: 456).

*Astragalus austrinus (Small) E. D. Schultz. So referred is *Waterfall* 7800, shallow sand on gypsum, 4 miles east and 4 south of El Dorado, Jackson County, June 5, 1948.

Cory (*op. cit.*) lists this species from the adjacent Plains area of Texas. Rydberg (*N. Am. Fl.* **24** (7): 431. 1924.) says that it ranges from "Texas to Colorado, Utah, Lower California and Durango."

*Astragalus humistratus Gray. So referred is *Waterfall* 9077, top of Black Mesa, 2 miles north of Kenton, Cimarron County, June 27, 1949.

In the North American Flora (**24** (6): 315. 1929.) this species is said to occur from southern Colorado to Chihuahua and Arizona.

Astragalus Lindheimeri Gray. At the Bebb Herbarium of the University of Oklahoma this species is represented by *Waterfall* 7819, saline plain, 4½ miles south of Hollister, Tillman

[1] Fernald, M. L., *Draba in temperate Northeastern America*. Rhodora **36**: 368. 1934.

County, June 5, 1948. In the herbarium of Oklahoma A. & M. College there is a sheet, *Louise Perrin* 40, one mile north of Altus, Jackson County, April 18, 1937.

Rydberg (*N. Am. Fl.* **24** (7): 428. 1929.) restricts its distribution to Texas.

Dalea nana Torr. The only location from which the author has found this species in Oklahoma is in the stabilized sand-dunes west of Boise City, Cimarron County, where it was collected as *Waterfall* 9052.

*Modiola caroliniana (L.) G. Don. was collected as *Waterfall*, 8888, edge of woods along road, 4 miles south and 2 miles east of Tom, McCurtain County, June 6, 1949.

In our country this monotypic genus has been known previously[1] from Florida to Texas and Virginia.

Oenothera canescens Torr. and Frem.

This species had been collected in Texas, near Amarillo, and in Kansas, including the type (*Am. Journ. Bot.* **19:** 767. 1932). Therefore it should be expected in the Oklahoma panhandle. Penfound has collected it in Hitchland Playa, near Hitchland, Texas County (*Penfound* 351), but the map shows the playa to be just over the state line in Texas. He states that he has seen it in Griggs Playa, Cimarron County, but we have no confirmatory herbarium specimen. Since the species is so distinct from other Oklahoma Oenotheras we may be fairly certain that it occurs in the state, but confirmation, by way of herbarium material, is still needed.

*Asclepias macrotis Torr. Although the present author mentioned *A. macrotis* as an associate of *Sarcostemma lobatum* when he described the latter (Rhodora **51:** 59. 1949), it apparently has not been otherwise reported as a part of the state flora. We have several collections of *A. macrotis*, all from the mesa area of northwestern Cimarron County.

*Asclepias obovata Ell. This species has been collected as *Waterfall* 8102, prairie 2 miles southeast of Talihina, Le Flore County, June 24, 1948, and as *Waterfall* 8405, silty soil 20 miles southeast of Atoka, Atoka County.

Cory (*op. cit.*) records *A. obovata* from adjacent areas in eastern Texas.

[1] Small, J. K., *Manual of the Southeastern Flora*. 1933.

*Asclepias viridiflora Raf., var. linearis Gray. We have this variety as *Eskew* 531, 1 mile southwest of Blanchard, Grady County, July 29, 1936, and *Waterfall* 7903, slopes of Black Mesa, 3 miles north and 1 mile west of Kenton, Cimarron County, June 13, 1948.

The lateral veins in the leaves of var. *linearis* seem to be much less prominent and are more ascending than in the typical variety.

Gilia rigidula Benth., var. acerosa Gray. In Oklahoma the author has found this plant only from the caliche ridges east of Guymon in Texas County. It is represented by *Waterfall* 9056.

*Myosotis macrosperma Engelm. In the folders of *M. verna* I find 3 sheets referrable to *M. macrosperma* as the two are differentiated by Fernald.[1] They are: *Hopkins* and *Cross* 1764, swampy woods 2 miles south of Talihina, LeFlore County, May 6, 1937; *M. Hopkins, Aven* and *Ruth Nelson* 1056, low woods near creek, 3 miles south of Lehigh, Coal County; *Aven* and *Ruth Nelson* and *George Goodman* 5601, shaded rocky stream bank, 15 miles north of Broken Bow, McCurtain County, April 21, 1946.

*Physalis Fendleri Gray. This species has been collected as *Demaree* 13388, top of bluff, John Regnier Ranch, Kenton, Cimarron County, July 28, 1936. We also have *Waterfall* 3155, 7891 and 7915, all so referrable, and all collected from the mesa area of northwestern Cimarron County.

Physalis hederaefolia Gray, var. **comata** (Rydb.), stat. nov. (*P. comata* Rydb. *Bull. Torr. Bot. Cl.* **22**: 306. 1895). In the western part of the Oklahoma panhandle we have a *Physalis* that looks like *P. hederaefolia*, but has long (1–2 mm.) flat jointed hairs scattered on the stem, leaves and calyces among the abundant viscid capitate hairs. These plants the author is referring to var. *comata*. Typical *P. hederaefolia* may have a villous pubescence, of somewhat jointed hairs (up to half as long as in var. *comata*) mixed with the short capitate glandular hairs, but the pubescence seems to be denser and shorter. Referred to var. *comata* are: *Waterfall* 7867, 14 miles east of Hooker, Texas County, June 11, 1948; *Waterfall* 7445, plains north of the Black Mesa, north of Kenton, Cimarron County, July 9, 1947; *Waterfall* 9240, northeast slopes of the Black Mesa, 3 miles north and 1 east of Kenton, Cimarron County, August 10, 1949.

Physalis mollis Nutt., var. cinerascens (Dunal) Gray. Although our current manuals and check-list do not mention this variety, it is recorded by Rydberg[2] from both "Indian Territory"

[1] Fernald, M. L., *Another Century of Additions to the Flora of Virginia.* Rhodora **43**: 637. 1941.

[2] Rydberg, P. A. *The North American Species of Physalis and related Genera.* Mem. Torr. Bot. Cl. **4** (5): 355. 1896.

and "Oklahoma Territory," roughly, eastern and western Oklahoma. We have several sheets in our herbarium.

*Solanum elaeagnifolium Cav., f. albiflorum Cockrell. The white-flowered form was collected as *Waterfall* 7748, plains 5 miles north of Mangum, Greer County, June 2, 1948.

*Dyschoriste linearis (T. and G. apud Engelm. and Gray) Ktze. This species was collected in 1949 as follows: *Waterfall* 9020, short grass pasture, 4½ miles east of Grandfield in Cotton County, June 16; *Waterfall* 9164, on limestone hill 7 miles west and 1 south of Marietta, Love County, July 15; *Waterfall* 9167, "breaks" along Red River 6 miles south and 2½ west of Randlette, Cotton County, July 15. Here it was very abundant.

Kobuski[1] cites specimens from Texas, New Mexico and Mexico. In the Herbarium of Southern Methodist University there are two specimens from Cooke County, Texas, which is adjacent to Love County, Oklahoma. They are: *Whitehouse* 15831, 10 miles south of Gainesville, May 24, 1946; *D. S. Correll and H. B. Correll* 12970, rocky soil, western end of county.

Viburnum dentatum L., sensu Svenson in Rhodora **42:** 5. 1940, and Fernald, Rhodora **43:** 647. 1941. I am referring to this species *Waterfall* 8826, wooded hill, 11 miles south of Bethel, McCurtain County, June 4, 1949.

The fruits are glandular, as are the pedicels, peduncles and upper stem parts; the petioles are hirsute and glandular. Most of the leaf blades are about 8 cm. long and 8 cm. wide, or 8 long and 7 wide, or 9 long and 8 wide; the veins are sparingly pubescent beneath with simple hairs, or with a few capitate-glandular ones; the axils of the veins are quite pubescent. There are a few scattered hairs elsewhere on the lower and also on the upper leaf surfaces. The margins are coarsely dentate to sinuately dentate. We also have *Little* and *Olmstead* 466, as *Viburnum affine*, var. "*hypoleucum*" (*hypomalacum* Blake), gravel flood plain, Highway 21, north of Cedar Creek, McCurtain County, June 30, 1930. The leaves are smaller, and the blades being mostly about 5 cm. long and 3 to 4½ cm. wide with margins varying from coarsely dentate, through crenately undulate, to almost entire. They are not "*subtus dense pilosa*" as Blake described var. *hypomalacum* (Rhodora **20:** 14. 1918), but have only a few scattered hairs between the veins of the under leaf surfaces. These data appear

[1] Kobuski, Clarence Emmeren. *A Monograph of the American Species of the Genus Dyschoriste.* Ann. Mo. Bot. Gar. **15:** 36–39. 1928.

to offer further evidence in accordance with Fernald's statement (Rhodora **43:** 647–562. 1941) that leaf size, shape, outline and degree of pubescence seem not to be sufficiently constant, or geographically correlated, to use as a basis for the recognition of species or, possibly, of varieties in this species-concept.

*Ambrosia artemisiaefolia L., var. elatior (L.) Descourtils, forma villosa Fern. and Grisc. Of 20 sheets of *A. artemisaefolia* var. *elatior* in our herbarium 3 are referrable to forma *villosa.*

*Aster hemaesphericus Alexander. So referred are plants collected as *Waterfall* 8537, prairie 12 miles east of Haleyville, Latimer County, August 9, 1948.

They have the long rootstocks which the author of the species describes as characteristic. I am not familiar enough with *A. pedionomus* to satisfy myself concerning the specific distinctness of the two. The range of the two species is said[1] to include Kansas and Texas, therefore, by inference, Oklahoma.

*Brickellia brachyphylla Gray. So referred are: *Waterfall* 8657, north slopes of Black Mesa, 2½ miles north and 1 west of Kenton, Cimarron County, August 23, 1948; *Waterfall* 9244, northeast slopes of Black Mesa, 3 miles north and 1 east of Kenton, Cimarron County, August 10, 1949; *Waterfall* 9223, low stony slopes, 8 miles east of Kenton, Cimarron County, August 9, 1949.

This material has the subplumose pappus, few involucre-bracts, and ovate-lanceolate to lanceolate, sessile or subsessile leaves of *B. brachyphylla.* Robinson (*Mem. Gray Herb.* **1:** 46. 1917) states that this species occurs in Texas, Colorado, New Mexico and Arizona, with most of the cited specimens being from New Mexico.

*Brickellia californica (T. and G.) Gray. We have this species as *Waterfall* 8639, sandstone buttes, 8½ miles east and 1 mile south of Kenton, Cimarron County, August 22, 1948, and as *Waterfall* 8692, sandstone buttes south of Tesequite Creek, 1 mile west and 4 south of Kenton, Cimarron County, August 24, 1948.

*Chrysothamnus nauseosus (Pall.) Britt., near ssp. typicus Hall and Clements. So referred is *Waterfall* 9226, plains ½ mile north of Kenton, Cimarron County, August 9, 1949, and *Wm. E. Baker,* Cimarron County, summer 1935.

[1] Small, J. K. *Manual of the Southeastern Flora:* 1391. 1933.

Hall and Clements[1] say that it is "especially common in Wyoming and eastern Colorado".

*Cirsium horridulum Mich. This species was collected as *Waterfall* 8887, in pasture along small creek south of Tom, McCurtain County, June 6, 1949.

According to Cory (*op. cit.*) it is known from adjacent areas in Texas.

*Eupatorium rugosum Houtt., var. angustatum (Gray) Blake. *Hopkins* and *Van Valkenburgh* 6167, deep rich swampy woods in flood plain of the Little River, 6 miles north of Idabel, McCurtain County, October 12, 1941, has the acuminate, coarsely serrate leaves with cuneate bases as described for var. *angustatum*[2, 3] of western Louisiana and Texas.

*Franseria acanthicarpa (Hook.) Coville. The genus *Franseria* is recorded by neither Jeffs and Little (*op. cit.*) nor Stemen and Myers (*op. cit.*). The range of *F. acanthicarpa* as stated in the North American Flora, (**33** (1): 25. 1922.), "Saskatchewan and Alberta to Missouri, Texas and southern California," might be taken as inclusive of Oklahoma. We have the species as *Waterfall* 9257, valley of Carrizo Creek, 6 miles north of Kenton, Cimarron County, August 11, 1949.

In the fall of 1948, Mr. Stemen, who now collects pollen and other allergens on a commercial basis, brought to the author some young material of a *Franseria* which he believed, apparently correctly, as referrable to *F. acanthicarpa.*

Franseria confertiflora (D. C.) Rydb. We have several collections of this species from the western part of the Oklahoma panhandle. Rydberg included Oklahoma in his statement of the species distribution (*N. Am. Fl.* **33** (1): 28. 1922.). It is to be noted that 3 species of *Franseria* are now known from Oklahoma, the above two and *F. tomentosa* reported in Rhodora **45:** 116. 1943.

*Gnaphalium chilense Spreng. So referred is *Glassman* 1286, top of Mt. Scott, Wichita Mountains, October 26, 1947.

*Gnaphalium Wrightii Gray. This species was collected as *Waterfall* 8691, sandstone buttes south of Tesequite Creek, 1 mile west and 4 south of Kenton, Cimarron County, August 24, 1948.

Growing in the same vicinity were *Pinus ponderosa, P. edulis, Juniperus monosperma, Muhlenbergia Porteri, Asclepias macrotis,*

[1] Hall, Harvey M. and Frederic E. Clements. *The Phylogenetic Method in Taxonomy.* Carneg. Inst. Wash. Publ. 326. 1923.

[2] Gray, Asa. *Synoptical Flora* **1** (2): 101. 1884.

[3] Fernald, M. L. *Seventh Century of Additions to the Flora of Virginia.* Rhodora, **44:** 463. 1942.

Penstemon Fendleri and *Pericome glandulosa*. *G. Wrightii* has been previously known from the adjoining state of New Mexico.

Liatris punctata Hook., var. **coloradensis** (Gaiser), stat. nov., (*L. punctata* Hook., var. *typica* Gaiser, forma *coloradensis* Gaiser, Rhodora **48**: 351. 1946).

In the western part of the Oklahoma Panhandle, where it is common, *L. punctata* has the purple, mucronate involucre bracts as described in Gaiser's forma *coloradensis*. I have not found var. *typica* present in this area. Thus var. *coloradensis* seems to be distinct geographically in at least a part of its range from var. *typica*.

*Vernonia Baldwinii Torr., var. interior (Small) Schub., forma **alba**, f. nov., corrollis albidis. Type: *Waterfall* 8472, edge of Clear Lake, 3 miles south and 2 west of Tom, McCurtian County, August 7, 1948. The *type* is in the Bebb Herbarium of the University of Oklahoma.

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NEED FOR CAUTION REGARDING CERTAIN COLLECTIONS

M. L. Fernald

One of the greatest sources of confusion regarding the detailed or the broad ranges of plants is the lack of appreciation in the past, and sometimes in present times, of the sacredness of original data and the danger in labels not coming directly from the collector. The misinformation through which Linnaeus named plants, indigenous only in eastern North America, *Athamanta chinensis* (this becoming *Conioselinum chinense* (L.) BSP.) and *Hydrocotyle chinense* (the coastal *Lilaeopsis chinensis* (L.) Ktze.) is repeated for various plants with other wholly inappropriate or misleading names. Similarly, Michaux too often had on his labels geographic data strikingly contradicting the published statement or, as in the case of his *Angelica triquinata*, evidently written from memory or through confusion of geographic names. His *Angelica triquinata*, "*Hab.* in Canada", is a good example.

The photograph of his type cannot be matched with anything Canadian but, as shown in Rhodora, xlv. 298–300, plates 768 and 769 (1943), it was the plant described fifty years later as *A. Curtisii* Buckley, from North Carolina. By clerical error, apparently, Canada had been written instead of Carolina.

Such errors were too frequent in Linnaean and early post-Linnaean days and in the organizing of collections from somewhat unfamiliar territory, which were handled by others than the original collectors or which were loose in sheets and not mounted and organized until after the collector's death (as in case of Michaux's material); but an even more confusing practice was one which prevailed a century or so ago. Field-explorers, visiting new regions, collected plants new to their experience from several localities each, giving them field-numbers or otherwise (by locality, date, etc.) indicating them as seemingly different. These vast collections, brought or sent back to the sponsoring institutions, whether in Europe or America, were "lumped" by those who lacked the field-appreciation of them, and material from utterly different localities was distributed as all coming from a single station. Such confusions, with wholly different collections represented in the older herbaria as if one, and with the exact localities lost, are tantalizingly numerous and have led and still lead to many misinterpretations. These are short-sighted practices of the past, with misinterpretations which will always continue unless some future enthusiast has the time and necessary funds to visit all the leading herbaria of the period and properly to identify the confused elements and the wholly inconsistent paratypes.

My immediate purpose in this note, however, is not to expand on that familiar source of confusion, but to call attention to a large collection of plants of New England and New York which had similar treatment and which, distributed broadcast as duplicates, is bound to cause confusion. Rev. Joseph Blake (1814–1888) was an enthusiastic amateur botanist who at various times had pastorates at different towns in Maine, New Hampshire, Massachusetts and New York. At all these centers he collected assiduously and in great duplication. At his death his vast herbarium went to the Maine State College (now the University of Maine), where it was organized and overhauled by an instruc-

tor of keen enthusiasm. Being a young beginner in botany, I spent all time out of school-hours watching the process which was very simple: a specimen of each collection, with Blake's label, was set aside for preservation; then all duplicates of any number of collections supposed to be of one species were dumped into one cover, some one of the diverse labels copied and eventually all the duplicates, whether from Harrison (Maine), Wells (Maine), Gilmanton (New Hampshire), Willoughby or Smuggler's Notch (Vermont), Andover (Massachusetts), somewhere in New York or some other region, were distributed to other herbaria. The authenticity of data (and identity of plant) on labels of the duplicates, collected by Blake, is to be mistrusted and, if accepted, will often lead to error.

Another perpetual source of error is the label which emphasizes the home-address of the collector rather than the locality for the plant. George Engelmann had such a label and too often he forgot to give the locality for the specimen sent out, so that one has to be on guard. Allied to this source of error are the cases where two or more names of collectors appear on a label, but in which the collector's data has been carelessly forgotten, so that identical material is distributed by no. 1 as from one region but by no. 2 as from another (often in a state whence the plant is really unknown).

Similar sources of error might be enumerated but only two others, these seriously concerning records from Maine, will be here noted. Kate Furbish was an enthusuastic painter of the flowering plants of Maine and her wonderfully accurate illustrations (life-size) are invaluable. She kept no organized herbarium, but had many loosely tied newspaper-packages of pressed plants massed into a few deep mounds, with scores of species in one fold of paper. The packages had somewhere a memorandum "Fort Kent plants, 1880", or "Wells" or other locality and often the date. In November, 1908, when she was approaching her 75th birthday, Miss Furbish shipped to the New England Botanical Club her vast accumulation of loose material. As the then functioning Curator, I sorted the material and, with the aid of students, innocently (and, we supposed, helpfully) had labels made. One of them on a poor bit of *Rhexia virginica* bears the data "Fort Kent, Maine, July, 1880".

Now, so far as we actually know, *Rhexia* reaches its northern limit in central Maine in the acid peaty borders of Chimo Pond in Bradley, Penobscot County, about 150 miles south of the calcareous region of Fort Kent. At any rate, in 1891, while spending her summer at Orono, hearing that *Rhexia*, which she had "always wanted to see", occurred at Chimo, she was taken there by the late Fred P. Briggs. Briggs's account of her excitement on first seeing it was amusing. Jumping up in the boat and nearly capsizing it, she delightedly shouted: "Goody! goody! *Rhexia!* No wonder they call it the king of the flowers"; but that does not prove that she had unknowingly found it eleven years earlier at Fort Kent! One other of the products from Miss Furbish's packages came from a bundle marked "West Baldwin, September 10, 1900". This is a bit of *Cardamine bellidifolia*, definitely known in Maine only from alpine areas of Mt. Katahdin. Nevertheless, there is the label, reading: "Crevices of granite rocks in bed of mountain stream, West Baldwin, Sept. 10, 1900". The solution is as follows. Miss Furbish spent the summer of 1900 at West Baldwin in the Saco Valley, a region of low forested hills, without anything suggesting alpine conditions. Coming out from Mt. Katahdin in mid-July, 1900, I carefully packed in wet moss fresh plants, including the Cardamine, of species which I thought would be new to her, and sent them to West Baldwin. *Cardamine bellidifolia* was eventually tucked in with other plants collected or received by her at West Baldwin. Regretting to record such unintentional errors by one whom everyone admired and greatly respected, the facts are important as clarifying the situation, for she did not realize that the notes on her packages would be taken too literally.

One other case which concerns Maine records is that of a collection of identified plants passed in at the end of the spring-term at Orono, as collected at Shapleigh, York County, Maine. The student handing in the series could pray or exhort for half-an-hour at a stretch at Y. M. C. A. or Christian Endeavor meetings and during the spring-term had returned home on account of illness. The collection from "Shapleigh" was remarkable in containing several calcicolous species never before known from Maine. Somewhat later, the Josselyn Botanical Society of Maine went to the acid region of Shapleigh and hunted in vain

for them. When he was written to and asked to make known the stations, his reply was, that before transferring to Maine State he had spent a year at Massachusetts State College at Amherst, and that it was possible that some of the Amherst plants had got mixed in. He certainly needed to pray.

The upshot is, obviously, that great care must be exercised in accepting data from those who do not realize its importance, and that all of us should see that our own statements on labels are quite accurate. Gradually we learn that even the complimentary placing of names on the label of non-botanical members of a party or those who have had no part in the collecting may become embarrassing. Enough said!

SYNONYMY IN VIBURNUM OBOVATUM AND V. CASSINOIDES

Wilbur H. Duncan

A specimen labeled *Viburnum corymbosum* (Miller) Rehder was among a set of exchange plants recently received at the University of Georgia Herbarium. The specimen is obviously *V. obovatum* Walter, a species found in the Coastal Plain from Florida to Virginia, an area containing no closely similar relatives. I wondered about the status of the former name and attempted to find it in publications at my immediate disposal. It is neither listed in the Index Kewensis (including 9 supplements) nor included in Rehder (Manual of Cult. Trees & Shrubs: 1940; and Bibliography of Cult. Trees & Shrubs: 1949), Bailey (Manual of Cultivated Plants. Rev.: 1949), Robinson and Fernald (Gray's New Manual of Botany, Ed. 7.: 1908), Small (Flora of S. E. States: 1933), and other manuals. Shortly after these preliminary efforts I visited the Gray Herbarium and continued the search for published matter connected with the name. The Gray Card Index includes no reference to the *V. corymbosum* above but does cite *Viburnum corymbosum* Urb. (Fedde. Rep. Spec. Nov. **18:** 121, published 15 August, 1922) which is found in Cuba and differs considerably from the material in question.

Rehder's interpretation of the synonymy was eventually found as a footnote in Journal Arnold Arb. **3:** 214. 28 December, 1922. *V. corymbosum* (Miller) Rehder is, therefore, a later homonym

and is illegitimate, being published over four months later than *V. corymbosum* Urb. Furthermore, in my opinion, Rehder erred in this application of *V. corymbosum* to our southeastern *V. obovatum*. He states that "Though the figure published by Miller (Fig. Pl. L. 55, t. 83, fig. 1. [1760]) and cited under his *Cassine corymbosa* is not exactly typical for the species in question, it cannot be referred to any other species than *Viburnum obovatum* Walter, ——." It should be pointed out that Miller's description of figure 1, "Cassine foliis ovato-lanceolatis serratis oppositis deciduis, floribus corymbosis", does not match as to general leaf-shape and -margin any of the collections (including those at the Gray Herbarium) I have seen of this species. When the margins of the leaves in the drawing are examined carefully, it may be seen that they are indicated by faint but definite lines as being decidedly serrate. The coloring in the drawing follows a more or less straight line at the leaf margins and might easily mislead a casual observer. Miller's description and figure are much more readily referred to material of *Viburnum cassinoides* L. (sensu Gray's Manual of Botany, 7 ed. 1908 and Small (1933), Manual of the Southeastern Flora). In this species the leaves are occasionally serrate and ovate-lanceolate, whereas those of *V. obovatum* are faintly dentate-undulate to entire and are never ovate-lanceolate.

Miller (Garden Dict. Ed. 8: 1768) undoubtedly had seen material of *V. obovatum*, in as much as it was known in cultivation in England before that time. The description of one of his listed species should, therefore, be such as would include *V. obovatum*. If this species can be included only under his *Cassine corymbosum*, then the contention that Miller's *Cassine corymbosum* is a synonym of *Viburnum cassinoides* L. would be greatly weakened. On the other hand, if *V. obovatum* should come under another description of Miller's, then the above contention would be strengthened. The answer as to how Miller classified this species is partly tied up in the synonymy of *V. cassinoides* L. and sensu Willdenow.

Although *Viburnum cassinoides* Willd. (Sp. Pl. **1:** 1491. 1798) is listed as a synonym of *V. obovatum* (Hooker f. & Jackson 1895. Index Kewensis, p. 1194), I do not know upon what basis this was done for Willdenow's treatment indicates that he correctly inter-

preted and followed Linnaeus (Sp. Pl. ed. 2: 384. 1762). Willdenow's (Sp. Pl. ed 1. Vol. 1. pars. 2: 149. 1798) description, "Folia infima obovata; proxima ovata; superiora lanceolata", is identical with that of Linneaus and he cites specifically "Sp. pl. 384." In addition Willdenow lists Aiton, 1789 (Hortus. Kewensis 1. p. 370), who cites *V. cassinoides* of Linneaus (Sp. pl. 384.) as a synonym, although qualifying the citation with "exclusis synonymis." Aiton also describes the plant with "foliis lanceolatis laevibus margine revolutis obsolete crenulatis," a description that certainly more nearly matches our present conception of *V. cassinoides* L. than that of *V. obovatum.* Houttuyn, Lin. Pfl. Syst. 3, p. 357, cited by Willdenow, apparently gives the only reasonably good connection with the latter species. In this reference there is cited Miller, Garden Dictionary (presumably ed 8. 1768), species 9, *V.* (*Cassinoides*), under which appears, "The ninth sort grows naturally in S. C.: this has a shrubby stalk —; these are garnished with oval leaves about one inch long and more than half an inch broad, —." The length of leaves and range for the species strongly suggest *V. obovatum.* If Willdenow had in mind this species, then he likely would have cited specifically Miller's apparent description of it. *V. cassinoides* sensu Willd. is the same as that of Linnaeus. *Cassine corymbosa* (Miller, 1768) is not, therefore, referable to *V. obovatum* as Rehder (1922) contends. It is more likely referable to *V. cassinoides* L.

A final consideration seems pertinent. Did Linnaeus recognize *V. obovatum* as an entity under some other name and thus give us an earlier name than *V. obovatum?* A careful check was made through his descriptions and the photographs of specimens in the Linnaean Herbarium. Attention was returned to Linnaeus' description of *V. cassinoides,* especially because of his use of "Folia imfima obovata; —", a character certainly true of *V. obovatum,* and not characteristic of the former species. The photograph (No. 379.12) of the specimen labeled *Viburnum cassinoides* in the Linnaean Herbarium, however, indicates that a dwarfed lower leaf (on a very short lateral spur) is obovate and small, while the others are occasionally ovate and sometimes broadly lanceolate. The specimen is obviously of *V. cassinoides* (in the present general sense) with an abnormal lower leaf.

No other description by Linnaeus seems to single out or especially indicate that *V. obovatum* is included. One possibility appears, however, when other photographs of specimens in his herbarium are examined. Photograph number 380.3 is of a specimen that might be *V. obovatum*. This sheet, however, is labeled *Cassine Peragua* and is pinned to the previous sheet (Photograph No. 380.2) which is labeled the same but with later different annotations. The latter specimen is definitely not *V. obovatum*. It would seem, therefore, that Linnaeus did not recognize *V. obovatum* as an entity under any other name, and Walter's name, therefore, stands.

In order to enable others to make easy use of the data presented here a complete synonymy (in so far as material was covered in this study) is given of both *V. obovatum* and *V. cassinoides*, including certain references to nomenclatural and taxonomic treatments.

Viburnum cassinoides L., Sp. Pl. Ed. 2: 384. 1762. Aiton, Hortus Kewensis: 370. 1789. Willdenow, Sp. Pl. I: 1491. 1798. Pursh, Flora Amer. Sept.: 201. 1814. non *V. cassinoides* Willd. sensu Hooker f. & Jackson, Index Kewensis: 1194. 1895. Chapman, Flora of Southern States. Ed. 3: 1897. Robinson & Fernald, Gray's New Manual of Botany. Ed. 7.: 1908. Britton & Brown, Ill. Flora of North. U. S. & Canada: 1913. Small, Flora of the S. E. States: 1933. Rehder, Manual of Cult. Trees & Shrubs. Ed. 2. Rev.: 1940. Bailey, Manual of Cultivated Plants. Rev.: 1949.

Cassine corymbosa Miller, Garden Dictionary. Ed. 8: 1768. Fig. Pl.: Plat. 83. f. 1. 1760.

Cassine peragua Houttuyn, Lin. Pfl. Syst. Vol. 3: 357. 1773. non Miller, Garden Dictionary: 1768.

Viburnum pyrifolium Pursh, Flora Amer. Sept.: 201. 1814.

Viburnum nudum var. *cassinoides* Torrey & Gray, Flora N. Amer. 2: 16. 1841.

Viburnum corymbosum (Miller) Rehder, Jour. Arnold Arb. 3: 214. Dec. 1922. non *V. corymbosum* Urb., Fedde. Rep. Spec. Nov. 18: 121. Aug. 1922.

Viburnum obovatum Walter, Flora Caroliniana: 116. 1788. Pursh, Flora Amer. Sept. 201. 1814. Chapman, Flora of the Southern States. Ed. 3: 1897. Small, Flora of S. E. States: 1933.

V. cassinoides Miller, Garden Dictionary. Ed. 8: 1768. Houttuyn, Lin. Pfl. Syst. Vol. 3: 357. 1773. *Later homonym.*

V. cassinoides L. sensu Michx., Flora Bor. Amer. 1: 179. 1803.

V. cassinoides Willd. sensu Hooker f. & Jackson, Index Kewensis: 1194. 1895.

Viburnum corymbosum (Miller) sensu Rehder, Jour. Arnold Arb. 3: 214. Dec. 1922. *Later homonym.*

The use of facilities at the Gray Herbaium where a portion of this study was done is greatly appreciated. The visit at Cambridge was made possible by a research grant through Dr. George H. Boyd, Dean of the Graduate School, University of Georgia.

University of Georgia,
Athens, Ga.

A new Variety in Saxifraga.—The crenate to crenate-dentate leaves and the glandular-hairy pedicels of *Saxifraga virginiensis* from the eastern half of the United States make the following new variety appear very distinct.

Saxifraga virginiensis Michx. var. **subintegra** Goodman, var. nov., foliis integris vel repandis; pedicellis glabratis.
Type: *Goodman and Waterfall 4748*, McSpadden Falls, Cherokee Co., Oklahoma, May 1, 1948. (Bebb Herbarium of the University of Oklahoma).

There are ten other Oklahoma collections of *S. virginensis* in the Bebb Herbarium and all belong to the new variety. They are from Cherokee, Muskogee, and McCurtain counties.—George J. Goodman, University of Oklahoma, Norman, Oklahoma.

Notes on two adventive Plants of the Washington, D. C., Area.—Galanthus elwesii Hook., commonly called the "Larger Snowdrop", has been cultivated occasionally as an early spring garden flower in the United States over a period of many years since its discovery in Asia Minor in 1854. No record has been published heretofore, however, of its escaping from cultivation and maintaining itself successfully in the manner of a native American plant. In February 1949, I found a patch of snowdrops growing and flowering without cultivation in deep loam along the bank of a rivulet in a virgin deciduous woodland, about three quarters of a mile directly north of the District of Columbia. In 1950 the same plants were found in flower on March 5, immediately following the coldest period of the winter when the Weather Bureau reported a temperature of 15 degrees. The

area occupied by the plants approximates 60 or 70 square feet, and contains several hundred individuals. Obviously, they have been established in the location for a good many years. There are no homes or gardens in the immediate vicinity, and apparently nobody was aware of the presence of the plants before my discovery of them. Specimens deposited in the U. S. National Herbarium.

Ranunculus ficaria L., a native of Europe, is a plant rather rare in American botanical collections, though it has long been listed as occurring occasionally along the eastern seaboard from Massachusetts to the District of Columbia. Britton and Brown's Illustrated Flora, 1913, states that it flowers in April and May, and Hitchcock and Standley's Flora of D. C. and Vicinity, 1919, reported the same months for its flowering. There are no earlier dates on any specimens collected in the United States and deposited in the National Herbarium, but among the specimens from Europe is one collected in flower in Spain on January 19, 1894. I have found ficaria flowering in boggy soil near Forest Glen, in Montgomery County, Maryland, from late January into March and April, through periods when the temperature, officially recorded by the Weather Bureau, descended as low as 17 degrees below freezing. My observations cover 1949 and 1950.—Frank C. Cross, 9413 Second Avenue, Silver Spring, Maryland.

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